MEMO

May 15, 1981

cc: Glen Farris

TO: C. Henry, Director WPCD (MS 81)

FROM: B. Burrow, Industrial Waste (MS H)

SUBJECT: Discharges from ~~Isaacson~~ JORGENSEN Steel Company to the Duwamish River

During a tour of the Duwamish Waterway by Metro Personnel on March 31, 1981, concern was voiced about several discharges from the property of ~~Isaacson~~ JORGENSEN Steel Company to the Duwamish River. Curiosity was expressed regarding the physical and chemical characteristics of these discharges and their impact on local water quality. Questions involving the source of the discharges were also raised.

To answer these inquiries, the Industrial Waste Section inspected and sampled five riverfront discharge points tributary to ~~Isaacson~~ JORGENSEN Steel Company. The investigation was carried out during the low tide period on the morning of April 21, 1981 by Bruce Burrow and Jim Sifford under the supervision of Doug Hilderbrand. Access to this area could be achieved only by boat due to the location of the property-line fences.

Four of the five discharge points were sampled. See Figure (1) for approximate locations of the sample sites. Site #1 could not be sampled because of its height above the beach; what little effluent that could be collected appeared to be innocuous.

Following are the sizes of the pipes at each sample site: Site #2, 10-inch; Site #3, 24-inch; Site #4, 12-inch, and Site #5, 12-inch. All appeared to be concrete pipes.

Pipes emerging at Sites #1, #2 and #3 probably discharge cooling water from the plant. This cooling water overflows from metal quench tanks and is discharged from condensers. Site #4 carries water from a City storm line. The pipe at Site #5 probably discharges boiler blowdown. Positive identification of these sources would be available only by inspection of ~~Isaacson~~ JORGENSEN Steel Company drawings and plans.

Sample analysis of the four sample sites is detailed in Fig. 12. A column illustrating typical values for City-supplied water has been added for comparison. This comparative data represents water

METRO

from the City of Seattle Cedar River Watershed as supplied to the South Seattle industrial area. The water was taken from a location at Airport Way South and South 4th Street during October 1980.

Conclusion:

None of the discharges from ~~Isaacson~~ JORGENSEN Steel Company to the Duwamish River appear to pose a threat to local water quality. All effluent temperatures were well within acceptable levels; heavy metals concentrations are not appreciably greater than found in the City water supply; the chemical oxygen demand of the discharges is negligible and no oil or grease was observed. Further action by Metro does not seem to be appropriate at this time.

One unusual aspect of these discharges is that Isaacson Steel Company does not possess a current NPDES permit to discharge to the Duwamish River. They once held a waste discharge permit (State of Washington Pollution Control Commission Permit No. 2586)* but that permit expired on September 20, 1971. Ms. Barbara Smith, of the Redmond DOE office, was contacted and could not find a valid waste discharge permit for Isaacson Steel Company. Apparently the DOE does not have plans to require such a permit. Ms. Smith did relate that the DOE had recently answered a citizen complaint regarding these discharges. The complainant alleged that ~~Isaacson~~ Steel Company was discharging oily wastes from several of the aforementioned pipes. Reportedly, these occurrences were observable only at low tide. DOE personnel from the Redmond office investigated the complaint but could not find any evidence to substantiate the allegations. No further action on this complaint is being taken by the DOE.

BRB:nb

* JORGENSEN - WPCC Permit # 2587 Sept. 20, 1966 through Sept. 20, 1971
- STATE PERMIT # 3913 Oct. 14, 1971 through Oct. 14, 1976

JORGENSEN
~~ISAACSON~~ STEEL CO. DUWAMISH RIVER DISCHARGES

April 21, 1981

Physical/Chemical

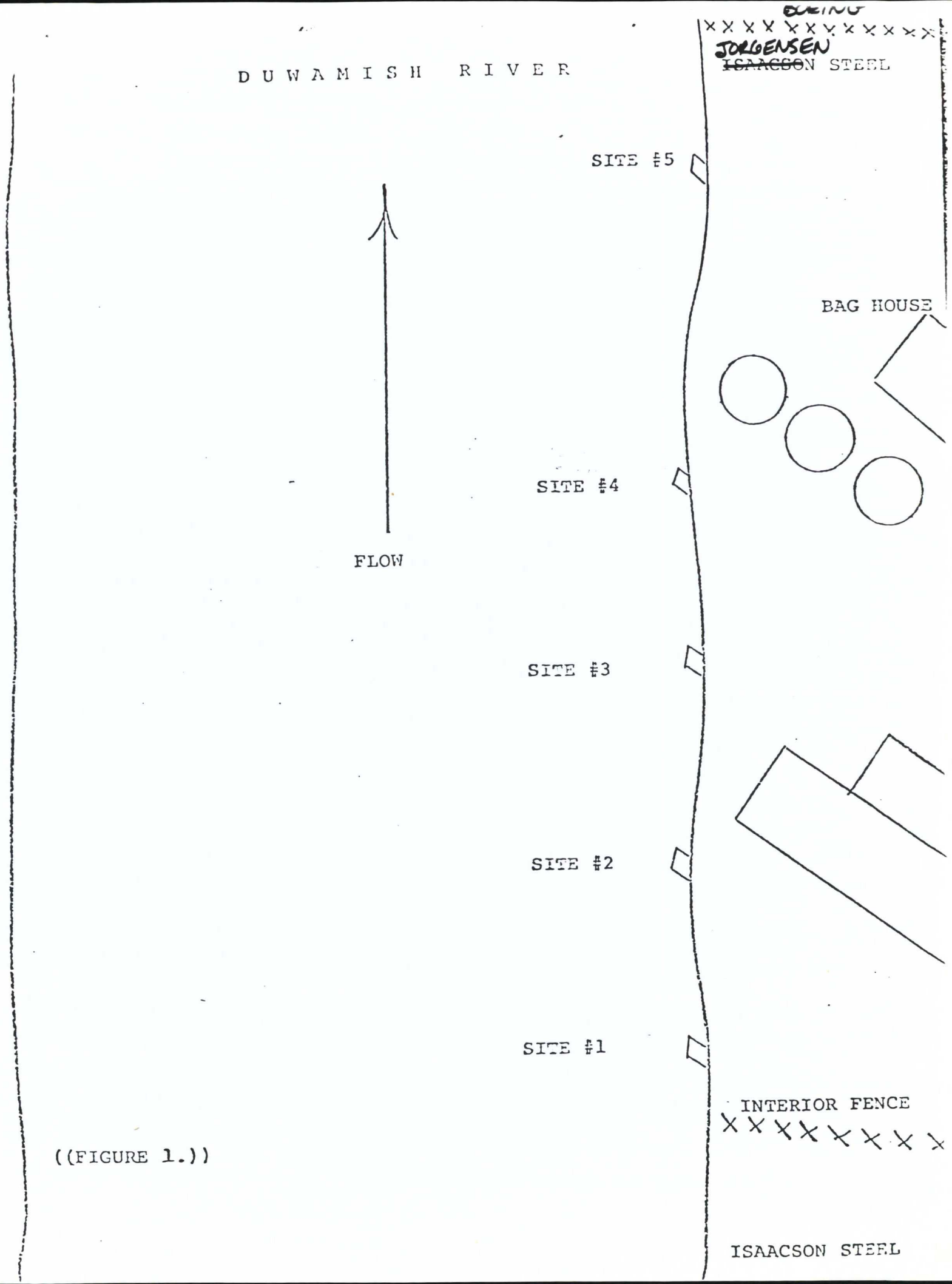
Site	Time	Temp., °C	COD (mg/l)
#2	1055	16.7	22.0
#3	1058	12.2	10.0
#4	1101	16.4	25.0
#5	1103	20.8	7.4

pH/Heavy Metals

Site	pH	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Ni (mg/l)	Pb (mg/l)	Zn (mg/l)
#2	7.0	< .008	< 0.06	0.02	0.09	< 0.04	0.044
#3	6.9	< .008	< 0.06	< 0.02	< 0.04	< 0.04	0.013
#4	7.3	< .008	0.09	0.04	< 0.04	< 0.04	0.138
#5	7.0	< .008	0.07	0.07	< 0.04	< 0.04	0.135
* City	7.1	< .008	< 0.06	< 0.02	--	< 0.04	< .006

*City of Seattle Water Supply - October 1980

(FIGURE 2.)


BOEING
JORGENSEN
ISAACSON STEEL
DUWAMISH RIVER
SITE #5
BAG HOUSE
SITE #4
FLOW
SITE #3
SITE #2
SITE #1
INTERIOR FENCE
ISAACSON STEEL

((FIGURE 1.))

LAUCKS TESTING LABORATORIES

INCORPORATED

SEATTLE, WASHINGTON

CHEMISTS
SAMPLERS · INSPECTORS
ASSAYERS · SPECTROGRAPHERS
BIOLOGICAL CHEMISTRIES

DATE

CLIENT

REPORT ON

SAMPLE IDENTIFICATION

TESTS PERFORMED AND RESULTS:

[illegible]

RECEIVED

NOV 8 1983

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

MUNICIPALITY OF METROPOLITAN SEATTLE

INDUSTRIAL WASTE DISCHARGE PERMIT

APPLICATION FORM

KFJM

Application is hereby made for a permit to discharge wastes into the Municipality of Metropolitan Seattle Sewer System in accordance with RCW 90.48.165, RCW 35.58.180, RCW 35.58.200, RCW 35.50.360, and Metro Resolution 2310.

Section A General Information:

1. Company Name EARLE M. JORGENSEN CO.

2. Mailing Address P.O. BOX 24626, SEATTLE, WASH., 98124

3. Location of Plant Discharging Wastes if different from above 8531 EAST MARGINAL WAY SOUTH, SEATTLE, WASH., 98124

4. Name, title, address, and telephone number of person to contact concerning information in this questionnarie:

   Name JESS FARMER Title GENERAL SUPERINTENDENT

   Address 8531 E. MARGINAL WAY SO. Phone No. 762-1100

Section B Product or Service Information:

1. Brief narrative description of manufacturing or service at plant address:

   MANUFACTURING AND DISTRIBUTING INGOTS, BILLETS, AND CUSTOM MACHINED PARTS.

2. Raw Materials and Chemicals used in Processes:[1]

Brand Name	Chemical, Scientific or Actual Name	Quantities Used per Day Average	Quantities Used per Day Maximum
	HYDROCHLORIC ACID		
	SULFURIC ACID	LOT TOTAL: 1/6 QUART/DAY, ESTIMATED	
	NITRIC ACID		
MORTON	SODIUM CHLORIDE	50 LBS/DAY	50 LBS/DAY

[1] FOR FURTHER EXPLANATION SEE EXHIBIT #3.

3. Describe how raw chemicals and hazardous materials are stored. Have steps been taken to insure that spills resulting from accidental spillage or ruptured containers will not enter a waterway or sewer?

ALL PETROLEUM BASE CHEMICALS ARE STORED IN ACCORDANCE WITH OUR "SPILL PREVENTION AND COUNTERMEASURE PLAN" PROJECT #1016-11-00, FILE #305-2, REPORT #1, PREPARED BY FRANKFURTER INC. FOR FURTHER INFORMATION SEE EXHIBIT #3.

4. Products Manufactured or Processed:

	Products	Quantity and Unit Average	Maximum
1.	STEEL	4600 TON/MONTH	5400 TON/MONTH
2.			
3.			
4.			
5.			

Section C Plant Operational Characteristics:

1. Plant Operations:

	Days per year	Number of Employees per Shift Day	Night	Swing
Average	312	210	25	150
Maximum	312	214	80	160

2. Explain any seasonal variation you may have in waste discharge volumes, plant operations, raw materials, and chemicals used in processes, and/or production:

NO SEASONAL VARIATIONS

3. Give a detailed description of the sources of all industrial waste within your industry. Describe in detail the treatment given each of these wastes. Include in this description the disposal methods used for these wastes and also for any sludge collected by your waste treatment system. Include a schematic flow diagram showing the sources of all wastes and their flow pattern. Include this information with your application as Exhibit 1.

4. Metal finishing and metal etching industries give a breakdown of capacity and number of tanks by solution type, concentration, and estimated dragout. Identify tanks containing significant quantities of phosphorous, nitrogen, heavy metals, cyanide and etching solutions that concentrate heavy metals. Describe what precautions have been taken to contain and prevent discharge of plating solutions spilled as a result of ruptured or leaking tanks. Include this information with your application as Exhibit 2.

Section D Water Consumption and Loss:

1. Source of Supply CITY OF SEATTLE WATER

2. List water consumption within the plant.

	AVERAGE GAL/DAY	MAXIMUM GAL/DAY
a. Industrial Processing		
b. Cooling	620,730	737,690
c. Boiler Feed	34,600	46,150
d. Water Incorporated into Product	N.A.	N.A.
e. Other (Specify) SEE EXHIBIT #3	6,670[1]	7,310[1]

Raw water treatment (specify water conditioning chemicals used) MORTON K.D. COARSE SALT

3. List discharge or water losses to:

	Average Gal./Day	Maximum Gal./Day
a. Municipal Sewer (Industrial and Sanitary waste water	16,360	17,000
b. Surface waters and storm sewers (specify)	645,625	774,135
c. Waste haulers	15	15
d. Evaporation INCLUDED IN SURFACE WATER AND STORM SEWERS.		

4. Describe all waste water treatment equipment or processes in use: ONE 1000 GALLON OIL SEPERATOR FOR 3000 TON PRESS.
ONE LIME PIT FOR ACID ETCH HOUSE ACID TANKS.

5. Planned waste treatment improvements: (Submit on separate sheet as Exhibit 3). Describe any additional treatment or changes in waste disposal methods in planning or under construction.

6. Give any additional information or comments you feel necessary to clarify this application as Exhibit 3. Include all information for previous questions, where additional space is necessary as part of Exhibit 3.

7. The information given on this application is correct and accurate to the best of my knowledge.

Signature

JACK BUNT
Printed

Date

ASSISTANT MANAGER
Title

* Please specify units. For example: Tons/Day, pounds per day, barrels per day, etc..

EXHIBIT #1 (SEE MAP)

RE: SECTION 'C', QUESTION #3

INDUSTRIAL WASTES DISCHARGED TO METRO FROM EARLE M. JORGENSEN CO. ARE WASTE WATER, SALT USED TO REGENERATE SODIUM ZEOLITE, HYDROCHLORIC, SULFURIC OR NITRIC ACID.

THE SALT IS USED TO REGENERATE SODIUM ZEOLITE IN THE WATER SOFTENER BEFORE THE WATER IS USED IN THE BOILERS. WATER USED DURING BLOWDOWN IS RETURNED TO THE METRO SEWER SYSTEM.

THE HYDROCHLORIC, SULFURIC OR NITRIC ACID IS USED IN THE LABORATORY FOR ETCHING SMALL SAMPLES AND IS HIGHLY DILUTED UPON DISCHARGE TO METRO WITH RUNNING WATER.

THE MAJORITY OF WASTE WATER IS FROM A 1000 GALLON CAPACITY OIL SEPERATOR FOR THE 3000 TON PRESS. THE SLUDGE FROM THIS OIL SEPERATOR IS COLLECTED BY 'UNITED DRAIN OIL', ALONG WITH ALL OTHER WASTE OIL.

INDUSTRIAL WASTES NOT DISCHARGED TO METRO AT EARLE M. JORGENSEN CO. ARE WASTE WATER AND MURATIC ACID. THE MURATIC ACID IS FROM TWO 500 GALLON CAPACITY ACID ETCHING TANKS AND IS DISCHARGED INTO A LIME PIT WHERE THE ACID IS NEUTRALIZED. THE WASTE WATER IS FROM QUENCH TANKS, VACUUM DEGASSING, MELT FURNACE COOLING (WHEN THE MELT FURNACE RECIRCULATING SYSTEM IS DOWN).

EXHIBIT #2

RE: SECTION 'C', QUESTION #4

ETCHING FACILITIES ARE PROVIDED BY TWO 500 GALLON CAPACITY MURATIC ACID ETCH TANKS WHICH ARE DISCHARGED TO A LIME PIT.

EXHIBIT #3

RE: SECTION 'B', QUESTION #2

RAW MATERIALS AND CHEMICALS DISCHARGED INTO METRO ARE: HYDROCHLORIC, SULFURIC OR NITRIC ACID IN THE AMOUNT OF ONE SIXTH OF ONE QUART PER DAY (ESTIMATED); WASTE WATER FROM 3000 TON PRESS OIL SEPERATOR DISCHARGING 8300 GALLONS PER DAY (ESTIMATED); RESIDUAL SALT FROM THE SODIUM ZEOLITE WATER SOFTENERS PRESENT IN THE BOILERS DURING BLOWDOWN; AND APPROXIMATELY 6700 GALLONS SANITARY WASTE DAILY.

RE: SECTION 'B', QUESTION #3

PETROLEUM BASE PRODUCTS ARE STORED IN ACCORDANCE WITH OUR 'SPILL PREVENTION AND COUNTERMEASURE PLAN' PREPARED BY FRANKFURTER INC. CONSULTING ENGINEERS ON PROJECT #1016-11-00 FILE #305-2, REPORT #1, REVISED 9-16-1974, REQUIRING CONTAINMENT WITH IN BARRIERS.

ALL DRY RAW MATERIALS AND CHEMICALS EXCEPT STEEL AND SCRAP IRON ARE STORED IN ALLOY BINS, MELT STORES BUILDING, OR WAREHOUSE.

EXHIBIT #3 (CONTINUED)

RE: SECTION 'D', QUESTION #2

KNOWN INFORMATION: TOTAL CUBIC FEET FROM CITY OF SEATTLE WATER BILLS, FEED WATER TO BOILERS FROM POWERHOUSE RECORDS.

PART 'C'; SANITARY WASTE ESTIMATED.

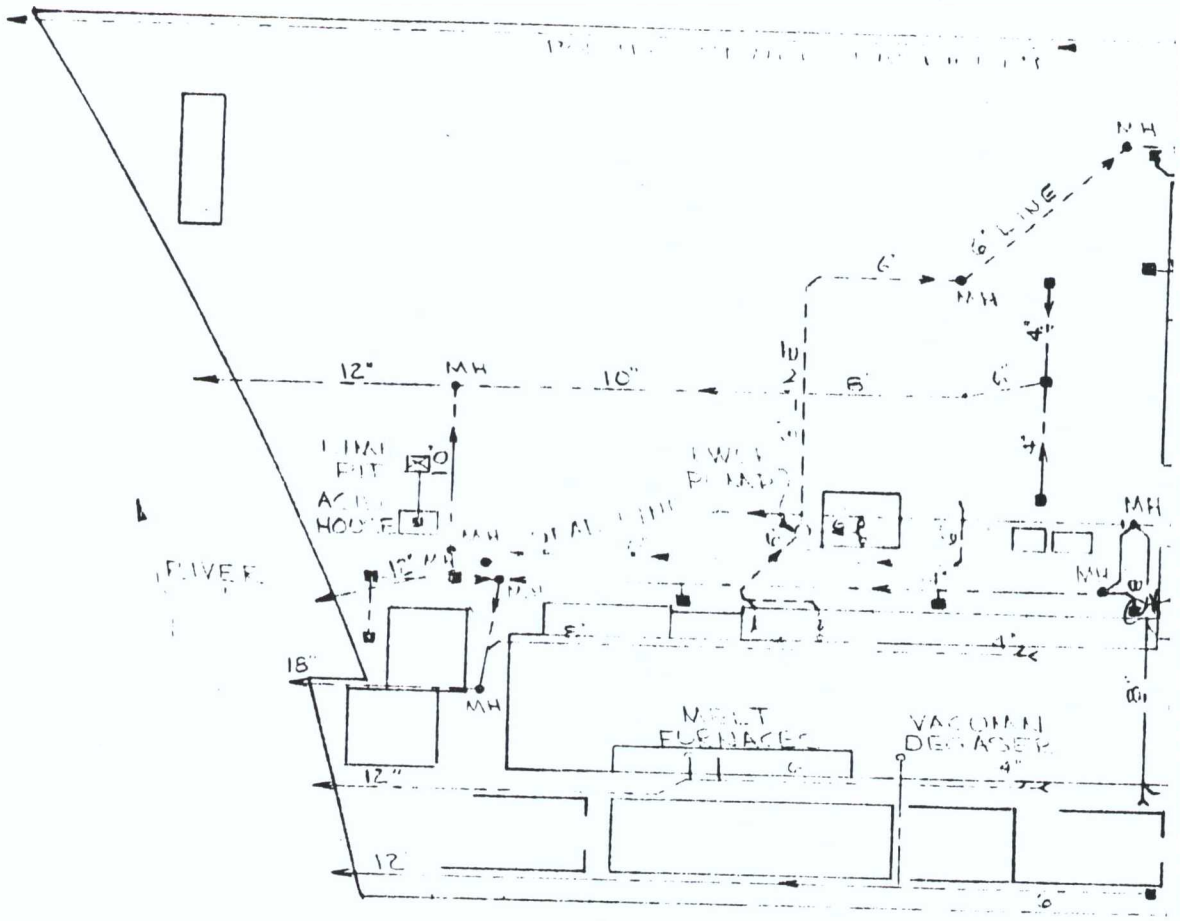
PARTS 'A' AND 'B'; INCORPORATED TOGETHER AND CALCULATED BY SUBTRACTING 'C' AND 'E' FROM TOTAL WATER USAGE.

RE: SECTION 'D', QUESTION #3

PART 'A' IS ARRIVED AT BY TAKING READINGS FROM EXISTING FOXBORO SEWER METER AND ADDING AN ESTIMATED AMOUNT OF SANITARY WASTE WHICH IS DISCHARGED THROUGH ANOTHER LINE.

PARTS 'B' AND 'D' ARE INCORPORATED TOGETHER AND ARE THE DIFFERENCE BETWEEN TOTAL WATER USAGE AND PARTS 'A' AND 'C'.

PART 'C' IS BASED ON OIL SEPERATOR BEING TOTALLY PUMPED OUT EVERY THREE MONTHS.



---- SANITARY S

---- STORM SEW

& Quemantank discharge line

EARLE M. JORGENSEN CO.
FORGE DIVISION
P. O. BOX 24026
SEATTLE, WASHINGTON 98124

USE FOR	REQ